

REMARKS

By the above amendment, claim 1 has been amended to incorporate features of dependent claim 3 therein, which has been canceled, with claim 1 being amended to clarify features of the present invention, as will be discussed below. Additionally, the dependent claims have been amended in light of the amendment of claim 1, as will be discussed below.

As to the rejection of claims 1 - 5, 7, 8 and 10 - 12 under 35 USC 112, first paragraph, this rejection is traversed insofar as it is applicable to the present claims, and reconsideration and withdrawal of the rejection are respectfully requested.

Referring to Figs. 1, 2 and 5 of the drawings of this application, for example, as described in the specification at page 15, for example, the inner side wall 110 of the reaction chamber 10 is coated with an insulating material or dielectric 102 which dielectric is exposed to the plasma within the reaction chamber. Furthermore, in accordance with the present invention, an electrically conductive member 21 is disposed so as to be exposed to the plasma within the reaction chamber at a position with respect to the inner side wall of the reaction chamber, and the electrically conductive member 21 is either electrically coupled directly to earth as shown in Fig. 2 (the electrically conductive member 21d being connected to earth by a cable), or is electrically coupled to earth by way of the inner side wall of the reaction chamber as illustrated in Figs. 1 and 5 of the drawings of this application, for example. As described at page 19 of the specification, the conductive member 21 is disposed so that the conductive material thereof comes into direct contact with plasma so as to enable direct current to flow therein from the plasma and the conductive member is either connected to the earthed reaction chamber container 10 made of conductive material, or earthed through a wire connection so as to allow

the incoming direct current to flow to the earth. Thus, the electrically conductive member 21 forms a DC earth, as described in the specification, and applicants note that by the present amendment, claim 1 has been amended to clarify recite such features. Furthermore, the electrically conductive member has an area in a range of 0.1 % to 10% of the inner side wall area of the reaction chamber, as described at pages 23 and 24 of the specification, which feature is also now recited in claim 1. Additionally, the electrically conductive member 21, which forms the DC earth is disposed at a position crossing a magnetic line of force that is closer to the substrate holder 14, as shown in Figs. 1 and 2 of the drawings of this application, than a magnetic line of force that crosses the inner side wall of the reaction chamber having the dielectric thereon. This physical relationship is clearly illustrated in the drawings and described in the specification of the drawings. Applicants note that the dependent claims have been amended in light of the amendment of claim 1 and applicants submit that the various points raised by the Examiner under 35 USC 112, first paragraph, have been overcome such that all claims should now be considered to be in compliance with 35 USC 112, first paragraph.

Likewise, with respect to the rejection of claims 1 - 5, 7, 8 and 10 - 12 under 35 USC 112, second paragraph, this rejection is traversed insofar as it is applicable to the present claims, noting that as now clearly recited in claim 1, the electrically conductive member is electrically coupled to earth so as to form a DC earth, and the claims have been amended to further recite the feature of the electrically conductive member forming the DC earth. Accordingly, applicants submit that all claims should be considered to be in compliance with 35 USC 112, second paragraph.

As to the rejection of claims 1, 7 and 8 under 35 USC 103(a) as being unpatentable over Kadomura et al (US 6,391,437B1) in view of Kazumi et al (US

6,388,624B1); the rejection of claims 2, 3 and 5 under 35 USC 103(a) as being unpatentable over Kadomura et al (US 6,391,437B1); and the rejection of claims 4 and 10 - 12 under 35 USC 103(a) as being unpatentable over Kadomura et al (US 6,391,437B1); such rejections are traversed insofar as they are applicable to the present claims and are traversed insofar as they are understood.

At the outset, applicants note that claim 1 is the only independent claim present in this application, with claims 2 - 5, 7, 8 and 10 - 12 being dependent therefrom. In rejecting independent claim 1 and dependent claims 7 and 8, the Examiner utilizes a combination of Kadomura et al (US 6,391,437B1) and Kazumi et al (US 6,388,624B1) in relation to the recited features of independent claim 1. However, with respect to dependent claims 2, 3, 5, 4 and 10 - 12, the Examiner only utilizes a single reference of Kadomura et al (US 6,391,437B1). The rejection of aforementioned dependent claims based solely on the single reference to Kadomura et al is not understood, in light of the Examiner's recognition that Kadomura et al does not disclose or teach recited features of independent claim 1, and thereby requires the addition of Kazumi et al in an attempt to meet such limitations. Applicants submit that therefore, the rejections of claims 2, 3, 5, 4 and 10 - 12 under 35 USC 103(a) as being unpatentable over Kadomura et al (Us 6,391,437B1), are improper, based upon the admission by the Examiner that Kadomura et al, taken alone, does not disclose or teach the recited features of independent claim 1. Accordingly, applicants submit that the rejection of the aforementioned dependent claims under 35 USC 103 should be overcome.

As to the requirements to support a rejection under 35 USC 103, reference is made to the decision of In re Fine, 5 USPQ 2d 1596 (Fed. Cir. 1988), wherein the court pointed out that the PTO has the burden under '103 to establish a prima facie

case of obviousness and can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references. As noted by the court, whether a particular combination might be "obvious to try" is not a legitimate test of patentability and obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination. As further noted by the court, one cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.

Turning to independent claim 1, as amended, and the Examiner's application of Kadomura et al thereto, applicants note that the Examiner contends that Kadomura et al teaches that "a surface portion of an inner side wall (18a; Fig. 22b) of the reaction chamber (21a; Fig. 16, 22b) that is exposed to the plasma ("dry etching"; col. 45, line 57) is substantially covered with a dielectric (112; Fig. 22b), an electrically conductive portion (18a; Fig. 22b) is disposed so as to be exposed to the plasma at a portion of the surface portion of the inner side wall (18a; Fig. 22b) of the reaction chamber (21a; Fig. 16, 22b) ...", applicants note that the Examiner identifies (18a) as a surface portion of an inner side wall of the reaction chamber and as the electrically conductive portion. By the present amendment, the term "portion" has been changed to "member", in relation to the electrically conductive member, and applicants submit that "18a" of Kadomura et al cannot be the inner side wall and the electrically conductive member, as now recited in claim 1. Moreover, referring to Fig. 22B of Kadomura et al, which is a variation of the side wall 21A of the reaction chamber as shown in Fig. 16, assuming arguendo, that the dielectric 112 covers

18a, which the Examiner refers to as a surface portion of an inner side wall of the reaction chamber, the dielectric material also covers the so-called electrically conductive portion or member 18a and the electrically conductive member is not exposed to the plasma. Moreover, applicants submit that it would be impossible for the electrically conductive member 18a, indicated as the electrically conductive portion, to be disposed at a position crossing a magnetic line of force that is closer to the substrate holder than a position of a magnetic line of force that crosses the inner side wall of the reaction chamber having the dielectric thereon, as recited in claim 1. Accordingly, applicants submit that claim 1, as amended, patentably distinguishes over Kadomura et al in the sense of 35 USC 103 and should be considered allowable thereover.

With regard to the Examiner's recognition of the deficiency of Kadomura et al, applicants note that the Examiner in paragraph i at page 5 of the Office Action recognizes that Kadomura et al does not teach specific features of claim 1. More particularly, the Examiner recognizes that Kadomura et al does not teach "the electrically conductive portion (18a; Fig. 22b) as an area corresponding to less than 10% of the inner side wall (18a; Fig. 22b) area of the reaction chamber ...". (emphasis added). As noted above, claim 1 has been amended to incorporate the features of dependent claim 3 therein so as to recite the feature that the area in a range of 0.1% to 10% of the area of the inner side wall of the electrically conductive member. While the Examiner describes Kazumi et al as teaching a similar capacitive coupling plasma apparatus, and that it would be obvious to provide such features in Kadomura et al based upon Kazumi et al, irrespective of the Examiner's contention, there is no disclosure or teaching in Kazumi et al of an electrically conductive member disposed so as to be exposed to the plasma within the reaction

chamber at a position with respect to the inner side wall of the reaction chamber which is covered with dielectric, and that the electrically conductive member is electrically coupled to earth one of directly and through the inner side wall of the reaction chamber so as to form a DC earth which enables direct current to flow therein from the plasma. Likewise, there is no disclosure or teaching that the electrically conductive member has an area in a range of 0.1% to 10% of the inner side wall area of the reaction chamber. Thus, applicants submit that claim 1, as amended, recites features not disclosed or taught by Kadomura et al or Kazumi et al taken alone or in any combination thereof in the sense of 35 USC 103 and claim 1 and therewith the dependent claims patentably distinguish over this proposed combination of references in sense of 35 USC 103 and should be considered allowable thereover.

With respect to the dependent claims, as noted above, irrespective of the Examiner's contentions concerning the applicability of Kadomura et al, taken alone with respect to dependent claims, the dependent claims incorporate the features of independent parent claim 1 therein and further patentably distinguish over Kadomura et al taken alone or in combination with Kazumi et al in the sense of 35 USC 103. Thus, all claims present in this application patentably distinguish over this proposed combination of references, and should be considered allowable at this time.

In view of the above amendments and remarks, applicants submit that all claims present in this application should be considered to be in compliance with 35 USC 112, and that all claims patentably distinguish over the cited art and should now be in condition for allowance. Accordingly, issuance of an action of a favorable nature is courteously solicited.

To the extent necessary, applicants petition for an extension of time under 37 CFR 1.136. Please charge any shortage in the fees due in connection with the filing of this paper, including extension of time fees, to the deposit account of Antonelli, Terry, Stout & Kraus, LLP, Deposit Account No. 01-2135 (Case: 648.43518X00), and please credit any excess fees to such deposit account.

Respectfully submitted,

ANTONELLI, TERRY, STOUT & KRAUS, LLP



Melvin Kraus
Registration No. 22,466

MK/jla
(703) 312-6600
Attachment